WHAT IS CLAIMED IS:

1. A method for generating a control output for a position control loop of a movable test object, said method comprising the steps of:

- optically measuring the position of the test object by focussing a measuring beam generated by a light source onto the test object using an optical system, and reflecting the measuring beam from the test object as a focussed spot onto a position-sensitive light detector to obtain measured position information;
- reading the measured position information obtained from the light detector serially into an analog to digital converter to obtain digitized position data;
- transmitting the digitized position data a digital signal processor;
- interpolating the digitized position data in said digital signal processor taking into account a distribution function corresponding to the actual intensity distribution to give a position signal corresponding to the geometric center or the maximum (I_0) of the intensity distribution of the focused measuring spot;
- calculating a desired position of the test object with a system control computer;
- supplying the calculated desired position to the signal processor;
- generating a digital control value by comparing the position signal of the focussed measuring spot determined by interpolation with the calculated desired position;
- generating an analog control value from the digital control value in a digital to analog converter, and
- inputting the analog control value into a control loop for regulating the position of the test object.

2. A method according to claim 1, wherein said movable test object is a mirror or reflector.

3. A method according to claim 1, wherein a known distribution function of intensity (I) is taken into account when the geometric center or the maximum (I_0) is determined.

4. A method according to claim 1, wherein lower intensity values are suppressed by a predefined threshold value (I_S) when the geometric center or the maximum (I_0) is determined.

5. A method according to claim 4, wherein the threshold value (I_S) is between 20% and 50% of the maximum intensity (I_0).

6. A method according to claim 5, wherein the threshold value (I_S) is on the order of magnitude of 30% of the maximum intensity (I_0).

7. A method according to claim 2, wherein a control output signal is generated for direct control of the mirror position.

8. A method according to claim 1, wherein said method is used in a scanning device, and the test object is a scanning mirror which carries out the scanning process using an additional light source.

9. A method according to claim 1, wherein the corresponding distribution function is determined while the test object is stationary, and the distribution function is input into the signal processor.

10. A method according to claim 1, wherein the corresponding distribution function is stored in a memory of the signal processor.

11. An apparatus for generating a control output for a position control loop of a movable test object, said apparatus comprising:
- a position sensitive light detector;

- an analog to digital converter connected to receive measured position information from said light detector;
- a signal processor connected to receive digital position data from said analog to digital converter, said signal processor comprising a memory for storing a distribution function, and
- a digital to analog converter connected to receive a digital signal from said signal processor and generate an analog position regulating signal therefrom.

12. An apparatus according to claim 11, further comprising a system control computer for calculating a desired object position, said signal processor being connected to said system control computer to receive a desired object position signal from the system control computer, and said signal processor being programmed to effect a comparison of the desired object position signal to a position signal derived from digitized position data received from the analog to digital converter.

13. An apparatus according to claim 12, wherein the signal processor is programmed to generate a position control instruction to offset any deviation detected in the comparison of the desired object position signal to the position signal derived from the digitized position data.

14. An apparatus according to claim 11, wherein said signal processor is programmed to determine a maximum intensity or a center of intensity distribution of a focussed light spot received by the position sensitive light detector from digitized position data received from the analog to digital converter.

15. An apparatus according to claim 11, further comprising an object position control circuit connected to said digital to analog converter for regulating the position of a moveable object in response to an analog position regulating signal received from said digital to analog converter.